

Amputation of Humerus - 5

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CASE
OF
PERIPHERAL NECROSIS OF THE HUMERUS,
INVOLVING THE HEAD AND ENTIRE SHAFT ; PRE-EXISTING
OSSEOUS ANCHYLOSIS OF THE SHOULDER, AND FIBROUS
ANCHYLOSIS OF THE ELBOW ; AMPUTATION AT
THE SHOULDER-JOINT.

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[Read October 4, 1876.]

THE patient, whom I bring before the College to-night, gives the following history :—

P. B., æt. 37, a native of Ireland, and by occupation an accountant ; so far as could be ascertained, hereditary disease did not exist in his family. When twelve years of age, after the receipt of an injury and exposure to cold, he was attacked with fever and very painful swellings of the right shoulder-joint and left knee-joint. A month after he was taken sick, matter formed in both joints, and pieces of bone were discharged. From the knee-joint, the pieces were small and not very numerous ; but from the shoulder-joint a large piece was discharged, which, according to the description given, resembled the head of the bone.

In six months, the wounds healed, with partial stiffness of the left knee-joint and right elbow-joint, and complete immobility of the right shoulder-joint. From that period until the month of April of this year, he enjoyed very good health,

being able to engage in his duties as accountant and school-teacher. The stiffness of the knee-joint made him slightly lame, while the movements of the arm were restricted by the immobility of the shoulder-joint.

At this time, he strained his arm in an effort which he made to lift a heavy box. Two days after receipt of the injury, the arm began to swell, and he was attacked with fever, somewhat in the same manner as when he had the first attack twenty-five years before. The swelling continued, and in three or four weeks matter escaped from the arm by a number of openings; small pieces of bone were discharged, and the number of openings increased until there were thirteen in all. During his illness he sustained fracture of the bone, in an effort made to raise his body in bed, the sound produced by the fracture being quite audible.

He entered the hospital on June 15, and was under the care of my colleague, Dr. Grove, who delayed operative interference on account of the patient's condition, transferring him to me on July 1, when I came on duty. The tonic treatment instituted by Dr. Grove was continued until August 1, at which time the patient's condition was thought to be such as to warrant an operation.

With a view to perform excision, if the condition of the bone and tissues were found to be such as to admit of it, an incision was made on the outer side, beginning about midway between the shoulder-joint and the insertion of the deltoid muscle, and extending below the middle of the arm. This incision permitted an inspection of the tissues, which were found to be so changed by inflammatory action as to forbid any attempt to save the limb. Amputation at the shoulder-joint was then determined upon, and performed by Dupuytren's method. On exposing the joint, firm, bony ankylosis was found to exist. Section of the bone, as near to the joint as possible, was made with the saw, the remaining portion being removed by the forceps and chisel.

The recovery of the patient was as rapid as could be expected for one in his condition; it was somewhat retarded

by the formation of an abscess in the lumbar region, from which two pints of gelatinous pus were removed by the aspirator. The union of the flaps occurred with but slight suppuration.

A dissection of the limb was made after removal, and the soft structures were found much changed by the extensive suppuration which had occurred; they were perforated by numerous sinuses lined with unhealthy granulations. The periosteum was at some points destroyed; at others, indurated and much thickened; in a few places, there were slight evidences that its osteogenetic function still existed. At the time of the operation it was ascertained that bony ankylosis existed at the joint, and that, as stated by the patient, the head of the bone had been separated and discharged during the first attack of illness; the upper portion of the bone, corresponding to that embraced between the tuberosities and the insertion of the pectoralis major muscle, was but slightly affected, although there were evidences that it had been attacked in the previous disease; the compact tissue was removed, leaving the central cancellated portion, which was somewhat softened, and, when compressed by the pliers, exuded a frothy fluid. Below the surgical neck, the shaft of the bone was found to be in a condition of extensive peripheral necrosis, giving it a worm-eaten appearance; this condition extended to the articulating surface of the bone, but did not involve it. At about the junction of the upper with the middle third of the bone, there was a fracture, in which fibrous union had occurred. There was no evidence of an attempt on the part of nature to obtain any osseous union; the ends of the bone were in apposition, and the surfaces were smooth. The appearance of the bone is shown in the accompanying illustration (page 20).

It would appear from the history given by the patient that, in all probability, the attack of illness which occurred at twelve years of age, was arthritis, following contusion of the joints and exposure to



cold, the former being produced by a fall from a horse. In the shoulder-joint, the disease was very extensive, producing complete destruction of the articulation, and obliterating its structures. The epiphysis, being separate at that time, was easily detached, and removed by the suppurative action. The knee-joint was not involved to any great extent, and the fibrous ankylosis of the elbow-joint was, without doubt, the result of disuse, assisted by the contraction and adhesion of the adjacent muscles and tendons.

The second attack of illness, that occurring in April of this year, was evidently one of *diffuse periostitis*, following the injury sustained in lifting a heavy weight. A condition of the periosteum may have existed, as the result of the previous disease, which rendered it susceptible to an attack of this nature.

With regard to the treatment of these cases, the most energetic means must be employed in the first stage of the inflammatory action—free incisions to relieve the tension of the periosteum, and to deplete it, and also to permit free escape of the pus should this form; at the same time constitutional remedies for the purpose of maintaining the strength of the patient should be resorted to. When extensive destruction of the bone ensues, amputation must be performed, providing the condition of the patient will admit of it.